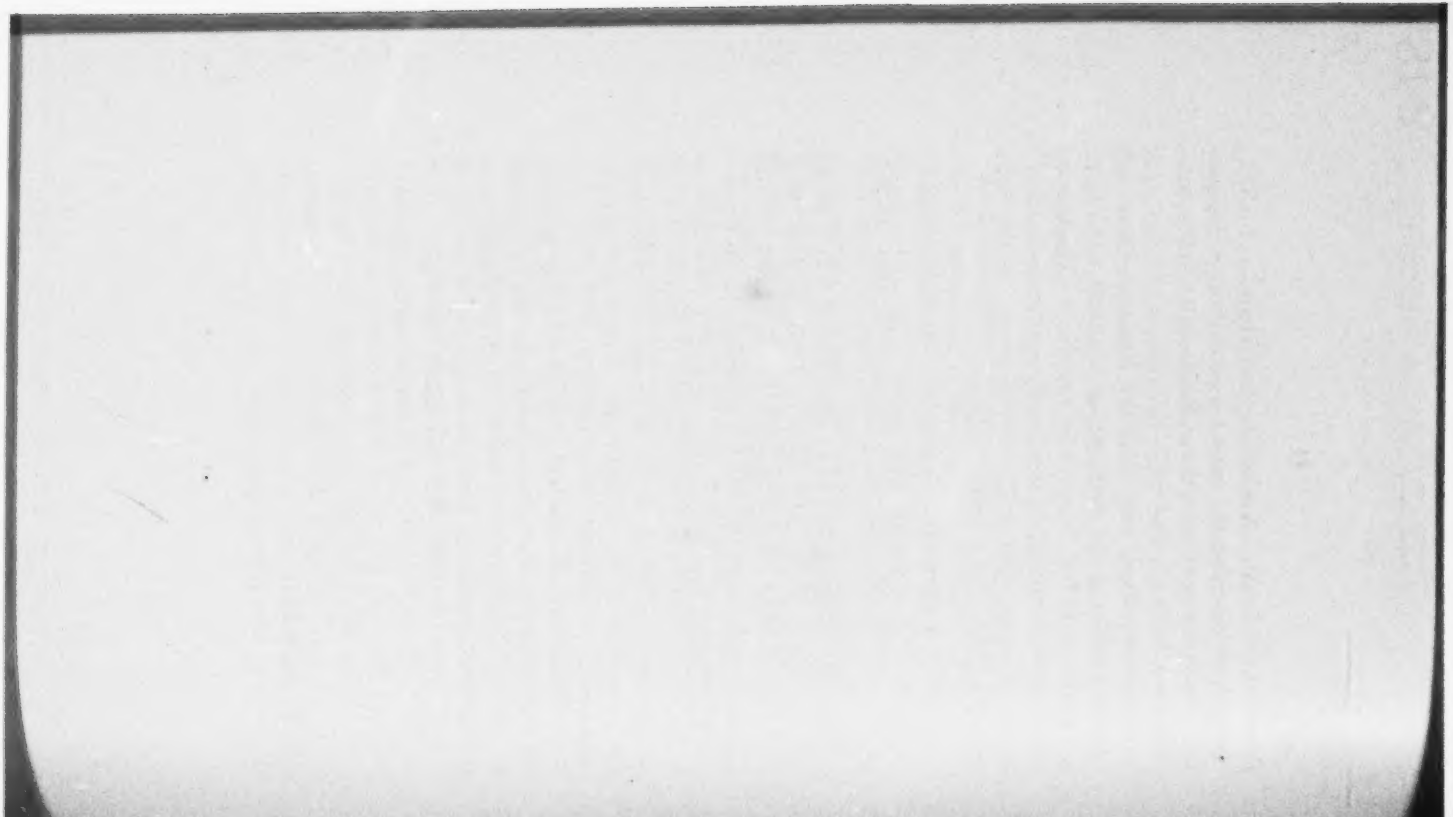

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OCTOBER TERM, 1899.

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No. 96.

WILLIAM WHEELER HUBBELL, APPELLANT,

vs.

THE UNITED STATES.

AND

OCTOBER TERM, 1897.

No. 198.

WILLIAM WHEELER HUBBELL, APPELLANT,

vs.

SAME.

APPEALS FROM THE UNITED STATES COURT OF CLAIMS.

BRIEF FOR THE APPELLANT.

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IN THE

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APPEALS FROM THE COURT OF CLAIMS.

BRIEF FOR THE APPELLANT.

Preliminary Statement.

The above actions are founded upon an implied contract between the appellant and the United States, whereby, it is asserted, the former became entitled to recover from the

latter royalties for the manufacture of certain cartridges of an improved form and design claimed to be covered by letters patent of the United States issued to the appellant.

The letters patent mainly relied upon to support the claim were issued February 18, 1879, on an application filed in the Patent Office December 28, 1878, and are numbered 212,313. The specifications declare that the "invention relates to the peculiar construction and combination of a circular metallic perforated plate, with a circular fulminate-carrier, and solid fire-tight case and head, in one piece," as thereinafter more fully set forth and described, and the claim is for the combination, in the bottom of a solid metallic flange cartridge case or shell, of a circular base, enclosing a central chamber of fulminate, and an anvil over the fulminate, provided with two or more openings, whose inner edges nearly coincide with the edges of the central chamber of fulminate, substantially as described (Finding 4, page 18)

The above suits together cover a period of alleged manufacture extending from July, 1879, to June 11, 1888, during which period it is found that the United States manufactured 43,090,667 reloading cartridges and 75,215,375 primers, of the kinds alleged to be covered by the terms of appellant's letters patent.

Of these numbers 3,866,352 reloading cartridges and 9,373,700 primers were manufactured by the United States between the months of July, 1879, and March 31, 1883, and between the last date and May 31, 1888, there were manufactured 39,224,315 reloading cartridges and 65,841,675 primers. The cost of manufacturing the reloading cartridges is $30 per thousand, and a fair royalty to the patentee would be $1.50 per thousand. The total amount claimed in both above cases is $177,459.06, of which amount $19,860.07 accrued due prior to March 31, 1883.

Appellant's first suit was instituted in the Court of Claims April 19, 1883, and covered only the first of the next above-mentioned periods. That suit was numbered 13793 on the docket of that court, and the petition was dismissed June 1, 1885, upon the findings of fact and the conclusions of law made of record by the court therein.

Claimant filed a motion for a new trial and for amended findings of fact. The motion for a new trial was refused, but leave was granted to the claimant "to submit to the court for their consideration, and for such action as they may find it just to take, findings II, III, and IV amended in the form requested by claimant in his motion, and also the drawings to accompany these and other findings claimed by him in said motion, as necessary to a proper understanding of the case" (No. 96, page 31).

On October 8, 1886, appellant submitted his amended findings of fact, in accordance with the requirement of the above order, and the same were pending, undisposed of, when, on June 11, 1888, he filed his second suit in the Court of Claims, covering the second of the above-mentioned periods, which suit was numbered 16261.

From the time of filing this second suit, the cases seem to have been treated by the court and the attorneys for the respective parties as having been consolidated, for the evidence which had theretofore been introduced in case No. 13793 appears also to have been used in case No. 16261, as is evidenced by the reiteration in the latter case of the findings of fact, word for word, as made of record in the former case, and the additional evidence taken in the latter case, at claimant's request, was ordered by the court to be read upon "the hearing of the motion pending under the order of the court for an amendment of the findings and a reversal of judgment" in case No. 13793 (No. 96, page 31).

It further appears that the waiver by claimant of all claim against the United States, on account of the manu-

facture of what was called the "cup-anvil cartridge," which was the main matter in controversy in case No. 13793 and but incidentally involved in No. 16261, was filed in the former case alone (No. 96, page 31), although made a part of the court's amended findings of fact filed in case No. 16261 (No. 198, page 23).

August 21, 1885, claimant filed in case No. 13793 an application for the allowance of an appeal to this court, "subject to motion for a new trial, &c.," and such application had not been acted upon and evidently was not intended or expected, either by the trial court or counsel on either side, to be acted upon until the disposition of case No. 16261 (198 of 1897) by this court, as the decision of that case upon the merits would have effectually settled the entire matter in controversy.

This court, however, disposed of the appeal in case 16261 upon the theory that the matter in controversy was *res judicata* by reason of the judgment of the Court of Claims, theretofore entered in case No. 13793, and it consequently became necessary to press to allowance the suspended application for an appeal in the latter case. Such appeal was allowed in open court on the 7th day of June, 1898.

ARGUMENT.

The application for allowance of an appeal in case No. 13793 (No. 96 here) was made in due season, and regularly brings the case before this court for review, notwithstanding the delay in its allowance.

This case was begun in the Court of Claims April 19, 1883, and is to be governed in matters of procedure by the laws and rules of practice then in force.

The Revised Statutes of the United States provide:

"SEC. 707. An appeal to the Supreme Court of the United States shall be allowed, on behalf of the United States, from

all judgments of the Court of Claims adverse to the United States, and on behalf of the plaintiff, in any case where the amount in controversy exceeds $3,000." * * *

SEC. 708. "All appeals from the Court of Claims shall be taken within ninety days after the judgment is rendered, and shall be allowed, under such regulations as the Supreme Court may direct."

Rule 3 of the Rules of the Supreme Court of the United States, relating to appeals from the Court of Claims, as adopted by the Supreme Court in 1866, provides that—

"In all cases an order of allowance of appeal by the Court of Claims, or the Chief Justice thereof in vacation, is essential, and the limitation of time for granting such appeal shall cease to run from the time an application is made for an allowance of appeal."

In the absence of any other statutory enactment or rule, it is plain that the filing of the application for allowance of the appeal on the 21st day of August, 1885, judgment having been rendered on the 1st day of June, 1885, and its endorsement by the then Chief Justice, "Let this stand without action as to allowance at present," operated to preserve all rights of appeal, and stayed the running of the limitation of time for granting such appeal.

The provision that "no appeal or writ of error shall be allowed after six months from the judgment or decree in such suit," which appears in section 10 of the act of March 3, 1887 (Supplement R. S. U. S., vol. 1, page 561), has no bearing here, for it is plain that such limitation applies only to cases brought in the circuit and district courts under the provisions of that act.

MERITS.

As to the Patent Features.

The findings of the court below establish the fact that the appellant has, since the year 1842, invented various improvements in ordnance and firearms, relating more especially to cartridges; that he filed several applications for patents, some of which eventuated in letters patent, and that at different periods the appellant communicated his inventions to the officers of the United States Army, who conducted experiments with some of his improvements.

The application for the patent in suit was filed December 28, 1878. The patent was issued February 18, 1879, and is numbered 212,313.

The specification recites that the improvement resides in—

> the peculiar construction and combination of a circular metallic, perforated plate with the circular fulminate-carrier and solid fire-tight metallic case and head in one piece.

The case or shell of the cartridge is of metal open at one end, its other end being closed and solid with the rest of the case, making the cartridge fire-tight. In the base of the shell is a fulminate chamber, which is shown in the drawings as being formed in the center of a circular disk, the chamber itself being of small diameter. Against this disk is placed a circular metallic plate closely fitting within the case, where it is held by contracting or pinching the latter, producing a tight joint around the edge of the plate. This plate at its center forms an anvil beneath which is the fulminate, the anvil affording a firm resistance to a central striker, such as the hammer of a gun, acting on the center of the base of the shell. In this way the fulminate is compressed and ignited with certainty. In

this plate, which forms the anvil over the fulminate, are two perforations or openings upon either side of a central line drawn through its axis. These openings constitute vents through which the fire is diffused into the base of the charge of powder. The instant explosion presses back the circular anvil plate, and prevents it from being blown out in the barrel, the charge being consumed from the base forward without reaction of fire or waste of the powder.

The vent openings are shown as being so located in the anvil plate that their inner ends are over the fulminate, or nearly coincident therewith. The specification recites:

> The fulminate chamber C may be recessed or formed in the metal of the circular plate E, with the central bar (anvil) *i* and two side perforations *k k* over it, dispensing with the paper.

The claim of the patent follows:

> In the bottom of a solid metallic flanged cartridge case or shell, the combination of a circular base enclosing a central chamber of fulminate and an anvil over the fulminate provided with two or more openings, whose inner edges nearly coincide with the edges of the central chamber of fulminate in the base of the cartridge, substantially as described.

The invention forming the subject-matter of the patent in suit was a carrying out or final adoption of the invention clearly indicated in the inventor's application for patent filed in 1865.

As to this application the Court of Claims, in its opinion, says:

> The claim of 1865 does not aid the patent of 1879, as it lacks the latter's distinguishing characteristics.

In this the Court of Claims was in error.

The 1865 application having been found as a fact by the

court below, it will be seen by reference to page 13 of the record that in said application it was stated that in lieu of forming a single hole in the center of an anvil plate

> two or more small holes to vent may be used, with the metal of the plate solid immediately opposite the center.

This is also embraced by the first claim, included in the appeal, and reading (on page 14 of the record) in the language "striking face * * * opposite the central face of the anvil plate."

The finding of the court below evidences the disclosure of this invention by Hubbell in his application for patent filed in 1865.

The court below found that the defendant, prior to the fall of 1866, had confined its experiments and manufacture of cartridges to those known as rim-fire, in which the fulminate was contained in a hollow flange or rim around the base. It was exploded by a blow from the hammer of a gun upon the exterior edge of this flange or rim.

This was followed in the fall of 1866 by some fifteen experimental cartridges, which proved failures. They were of the kind known as center-fire, and all had hollow-flange cartridge cases. In these cartridges the priming fulminate was located in a circular depression in the center of the base of the shell, held in place by a circular piece of metal pressed down over it. Fire to the powder charge was communicated through two holes at the extremities of a diameter of the depression or pocket in the base of the shell, the entire area of these holes opening into the pocket.

This was followed in 1868 by the cup-anvil cartridge, as to which no claim of infringement is made.

After 1868 numerous experiments were made to reinforce the hollow flange to prevent it from bursting, some with single disks and some with cup anvils

The cup-anvil cartridge was manufactured by the Government until some time in July, 1879, when it was abandoned

and the present reloading cartridge, against which the charge of infringement is made, was adopted in its stead. It was found that, owing to the juxtaposition or assemblage of the parts, this cartridge was best adapted to receive with certainty of fire the blows of the striker in the Springfield gun.

The court below found that on March 22, 1879, the appellant communicated the fact of his patent to the Secretary of War, and requested an allowance of royalties for all future cartridges containing his invention.

This reloading cartridge, as made and used by the defendant, comprises a hollow metallic shell having a solid flange or rim around the base, with a pocket in the exterior of the center of the latter, a hole or aperture being formed in the inner wall of the pocket. The anvil disk is located in the pocket and has its vent openings at opposite sides. It is placed within a cup which fits tightly into the pocket in the base. The fulminate is in the center of the cup, directly beneath the anvil—that is, the central solid portion of the anvil disk is over the fulminate. This places the inner edges of the vents nearly coincident with the fulminate. The vents open at their upper ends (supposing the cartridge to be standing on its base) into a groove which is cut across the face of the anvil disk. The flame from the fulminate passes through the vents into this groove, and thence through the hole or aperture in the pocket into the powder within the shell.

The defendant's contention is that the patent in suit is not infringed by the construction embraced in the reloading cartridge, first, because of the difference in the relative position of the vents, it being contended that limitations are to be placed upon the claim by reason of the disclosure of the file-wrapper contents; secondly, because in view of the state of the art, the claim is to be strictly construed; third, because of experiments by the Government prior to the

patent in suit; and, fourth, because of the introduction into the defendant's cartridge of certain additional features not contemplated by the patent.

The defendant insists that to infringe the claim of the patent the vents in the anvil plate must be so placed as regards the axis of the cartridge that all but a very small portion of each vent shall be further from that axis than is the circular wall of the fulminate chamber.

The claim must be construed in the light of the specification.

In the latter it is stated that—

> The plate E is provided with perforations *k k* upon either side of a central line drawn through its axis, as shown at *h h*, figures 2 and 3, sufficient space being left between these perforations to form the bar *i* of a breadth nearly equal to the diameter of the perforation C, immediately over which it rests.

Again:

> The fulminate chamber C may be recessed or formed in the metal of the circular plate E, with the central bar *i* and two side perforations K K over it.

The patentee recites that there are two purposes in locating the vents at the sides of the fulminate, to wit, to diffuse the fire most thoroughly and have an unperforated anvil over and against the fulminate to receive the central blow of the striker, and yet have free escapement for the explosive force from beneath the anvil, thus insuring certain ignition, retention of the anvil in this position, and complete combustion of the powder charge.

In the defendant's cartridge the anvil is located directly over the fulminate, the same as in the patent, and is formed with vents which open into a groove extending across the face of the anvil. The location of the fulminate is directly

beneath the anvil, and the inner edges of the notches or vents are nearly coincident with the chamber where the fulminate is positioned—exactly as contemplated by the patentee's claim.

The proceedings in the Patent Office, as shown by the file-wrapper contents, disclose absolutely nothing to preclude the claim of the patent being interpreted in consonance with the spirit of the invention as described in the specification.

The appellant is not seeking an interpretation of the claim of his patent co-extensive with that of any claim at any time presented and canceled. He insists that the construction employed by the defendant is clearly within the language of his claim as it stands.

The Government's reloading cartridge embodies a solid metallic cartridge case or shell, in the bottom of which, when organized, is a circular base enclosing a central fulminate, an anvil over the fulminate, and vents in the anvil at the sides nearly coincident, at their inner edges, with the central fulminate in the base of the cartridge. This is within the scope of the claim of the patent.

It is not necessary that two machines shall be precisely similar in construction to be identical.

Two devices are identical when they perform substantially the same function in substantially the same way to obtain the same result.

Cantrel *vs.* Wallick, 117 U. S., U. S. R., 689.

The fulminate in the Government's cartridge is placed in the bottom of a cup, the latter at this point forming the fulminate chamber, and the anvil is directly over the fulminate. The inner edges of the vents nearly coincide with this central chamber of fulminate, which in the Government's cartridge is the center of the bottom of the cup. It is this center which forms the fulminate chamber. The

cup is made larger than is necessary to accommodate the fulminate, in order that the anvil may also be fitted within it. This, however, does not destroy the fact that the inner edges of the vents nearly coincide with the fulminate chamber.

This interpretation of the relation of the fulminate chamber to the vent openings in the anvil is supported by the defendant's witness Bartlet.

> 80 X Int. Then you have in a Government cartridge a small fulminate chamber, center circular in a solid flange case, in the inside of the plane of the base of the cartridge shell fired by an indented central striker covered by an anvil plate with two vents at the sides and a bar in the middle, the vents primed from the chamber of the charge and communicating that charge at the base?
>
> Ans. Not quite so; the cartridge does not show how it is to be fired, but presumably it is to be fired as you have stated. I do not think the anvil of the Government cartridge fully covers the fulminate chamber.
>
> 81 X Int. It is fully covered except at the vents, is it not?
>
> Ans. Yes.

The fact that the anvil of the Government's cartridge is fitted within the cup and is provided with a cross-groove, into which the vents open so as to direct the fire through a central opening in the re entrant portion of the base into the powder charge, does not take the construction out of the claim of the patent.

If, in an improved device, the combination covered by an earlier patent be employed, infringement exists.

Elizabeth City *vs.* Pavement Co., 97 U. S., 126.
Shaver *vs.* Skinner Mfg. Co., 30 F. R., 68.
Pitts *vs.* Wemple, 1 Bissell, 87, 1855.
Carter *vs.* Baker, 1 Sawyer, 512, 1871.
Morey *vs.* Lockwood, 8 Wall., 230.
Filley *vs.* Littlefield Co., 30 F. R., 434.

The patents offered in anticipation and found as facts by the court below are:

Letters patent—
No. 53168, Mar. 13, 1866, to A. Moffatt.
78953, June 16, 1868, to R. J. Gatling.
87125, Feb. 23, 1869, to W. Tibbals.
87297, Feb. 26, 1869, to B. S. Roberts.
87735, Mar. 9, 1869, to J. R. Van Vechten.
90607, May 25, 1869, to W. Tibbals.

British letters patent—
No. 2906, Nov. 11, 1865, to J. Millar.
1658, June 5, 1867, to I. M. Milbank.
1184, Apr. 17, 1869, to E. T. Hughes.
1530, May 18, 1869, to J. H. Johnson.

As a careful analysis of these patents will show, not one of them discloses the subject-matter of the claim of the patent in suit. In fact, as to many of them, if not all, consideration seems a work of supererogation.

Patent to Moffatt, No. 53168, does not show the combination claimed. The case is primed with a fulminate, and has a paper wad consumable when the cartridge is fired.

Patent to Gatling, No. 78953, shows and describes a small metallic cup containing the fulminate and fitted within a recess or depression in the head of a second cup inserted in the shell of the cartridge. This latter cup has at its center an outwardly projecting teat against which the fulminate is forced when the cartridge is fired. Adjacent this teat are escape holes or vents. The combination claimed in the patent is not disclosed by Gatling.

Patent to Tibbals, No. 87125, discloses an anvil slightly wider than the diameter of the cartridge shell at the mouth, so that when forced into the bottom it will expand into an open flange. There is no description of a fulminate-carrier,

separate from the anvil and the case, and there is but a single vent in the anvil plate.

Patent to Roberts, No. 87297, relates to a star-shaped anvil having the ends of the several branches fitted within the flange of the cartridge shell. The combination claimed is not found in this patent.

Patent to Van Vechten, No. 87735, shows and describes a thin, flexible material, such as paper, interposed between the fulminate and the back or head of the shell and the anvil cup of the cartridge. This is not a pertinent reference.

Patent to Tibbals, No. 90607, discloses a cup within a hollow flanged metallic case, so inserted as to cover and protect the flange. There is no separate anvil, no fulminate chamber is shown, or any separate fulminate-carrier, separate from the anvil and enclosed in a circular base.

None of these patents contains the elements of the claims of the patent in suit, combined and arranged in relation to each other for the purpose set out in the specification.

British patent to Millar, No. 2906 of 1865, upon which the defendant mainly relies, does not disclose a cartridge having the characteristics of the patented cartridge. It shows and describes disks or wads, presumably of paper, inserted within the base of the cartridge and having spaces to contain the ignition medium. These wads are consumable when the cartridge is fired; they are not secured permanently within the cartridge, nor are they so arranged as to insure certainty of fire. The wads cannot in any sense act as an anvil. The purpose of the two wads was to place in them separate portions of the ignition medium. Upon one disk or wad was placed chloride of potash

and emery, powder of charcoal, while the other wad contained amorphous phosphorus, or the like, which, when the first-mentioned ingredient was forced into contact therewith, would effect ignition.

An air space or chamber formed by paper wads, or a large space, however formed, is not practicable in the use of a fulminate or any great explosive. In fact, a cartridge constructed in accordance with the Millar patent would be exceedingly dangerous, as spontaneous combustion would be likely to occur. While this patent may have a superficial resemblance to the construction employed by Hubbel, yet it is only superficial, as careful examination of the patent will disclose.

The remaining English patents may be briefly dismissed with the statement that they do not disclose anticipatory features, and it is not believed that they are now relied upon by the defendant.

Of these, patent to Hughes, No. 1184, of April 17, 1869, like patent to Millar, No. 2906 of 1865, has a mere superficial resemblance to the combination claimed. The specification of the patent is silent as to the construction of the base of the cartridge in which the fulminate is located. In fact, so far as the cartridge is concerned, the patent has reference solely to the manner in which it is loaded or charged with powder. It is too indefinite to be considered as evidence against the claim of the patent in suit.

The true test of infringement is, Would the subsequent device, if prior to the patent, constitute an anticipation?

Peters *vs.* Active Mfg. Co., 129 U. S., 530.
Thatcher Heating Co. *vs.* Burtis, 121 U. S., 286.
Grant *vs.* Walter, 148 U. S., 554.
Gordon *vs.* Warder, 150 U. S.

Since the defendant's cartridge contains all of the elements of the claims of the patent, had it been earlier in point of time than the patent, it would certainly be a complete anticipation. This being so, under the well-established rule, infringement exists.

There is absolutely nothing in the record to support the contention that the experimental cartridges used by the Government at various stages before the adoption of the reloading cartridge in 1879 constitute anticipation of the claim of the patent in suit.

Whatever experiments were made by the Government prior to 1879 resulted in failures and were abandoned.

Experiments, unsuccessful experiments, abandonment, and non-user are not anticipatory.

> Gamewell Fire Alarm Tel. Co. *vs.* Municipal Signal Co., 10 C. C. A., 184.
>
> City of Elizabeth *vs.* American Nicholas Pavement Co., 97 U. S., 126.
>
> Whitley *vs.* Swayne, 7 Wall., 685.
>
> Seymour *vs.* Osborn, 11 Wall., 516.
>
> Brown *vs.* Guild, 23 Wall., 181.
>
> Gayler *vs.* Wilder, 10 How., 477.

It is submitted, in conclusion, that neither the state of the art nor the proceedings in the Patent Office can preclude the claim of the patent in suit being given an interpretation which its language warrants, and that, given such interpretation, infringement by the Government's reloading cartridge must be found to exist.

In Blanchard *vs.* Beers, in 2 Blatch., 411, Judge Nelson said:

> The same test, and one that a jury should be guided by in all cases of this kind, is whether or not the defendant's machine, whatever may be its form or mechanical construction, has incorporated within it

the principle, or the combination, or the novel ideas which constitute the improvement to be found in plaintiff's machine. If it does, no matter what may be its mechanical construction or form, it is an infringement, an appropriation of the ideas of another, simply in a different form.

In addition to what has been said, attention is also invited to the fact that the defendant herein is not entitled to have the several patents upon which it relies considered by the court for the reason that section 4920, Revised Statutes, provides that where the general issue is pleaded, notice in writing to the plaintiff or his attorney, at least thirty days before trial, must be given by the defendant in order to enable resort to be had to the statutory defenses, while in suits in equity, like proofs may be given upon notice in the answer of the defendant.

The answer of the defendant (page 11 of the record) raises nothing more than the general issue. It is silent as to the patents hereinbefore recited.

Prior patents not set up in the answer cannot be introduced in evidence to invalidate the claim of the patent on the ground of want of novelty, when the claim is properly construed.

Grier *vs.* Wilt, 120 U. S., 412.

II.

As to the Course of Experiments and Manufacture.

As early as April 13, 1865, the appellant Hubbell filed in the United States Patent Office an application for letters patent covering a new and useful invention in center-primed metallic cartridges. The invention claimed was the combination in an ordinary copper-flanged cartridge case of a depression about a quarter of an inch in diameter

in the inner side of the rear or base plate with a copper plate or anvil having one or more perforations or vent holes placed over said depression with its edges extending into the surrounding flange. Fulminate was put into the depression and held in place by the anvil. The advantages claimed by the inventor for the cartridge were:

"The flange being filled up solid prevents it from stripping in extracting the shell. The fulminate being in the center (and not within the outer flange), makes it safer from accidental explosion. The concave plate secured by the outer rim, and held by the groove in the gun, makes a firm base of resistance to the action of the striker to explode the fulminate. The central issue of the fire forward through the gunpowder ignites it uniformly and most quickly."

It was said in the specifications that an anvil having a central vent was the best form of applying the invention,

"though two or more small holes to vent may be used, with the metal of the plate solid immediately opposite the center."

On appeal from the adverse decisions of the primary examiner the inventor adhered to his claim for both forms the opinion of the Court of Claims to the contrary notwithstanding—as note the language of the appeal:

"1. A thinned central rear sufficiently and only large enough to present an annular striking face around the center hole of the anvil plate *and opposite the central face of the anvil plate.*"

There would be no *central face* of the anvil plate unless it was made so by the presence of side vent holes "with the metal of the plate solid immediately opposite the center."

It is plain the applicant for patent persisted, on the appeal to the principal examiners, in his claim of both forms.

The application for patent was refused (Finding II).

April 25, 1872, claimant again unsuccessfully approached the Patent Office for letters patent covering the combination of a metallic cartridge case and—

"a circular centrally perforated paper disk, carrying the fulminate in its central perforation and secured between a circular metal plate similar in galvanic nature to the metal of the case, with an anvil or bridge piece in this circular metal plate over the fulminate, and one or two holes punched through it at one or both sides of the anvil face to admit the fire to the powder, and secured firm down on the paper disk by the pinched-in sides of the case over the middle plate to insure resistance to the fulminate." * * *

"Over this (the fulminate chamber) is placed a circular plate of the same kind of metal as the case or similar in galvanic nature, so as to prevent galvanic action or decomposition. *Two holes through which the fire from the fulminate reaches the powder are punched through this plate, leaving an anvil piece over the fulminate*" (Finding III).

A third application filed by Mr. Hubbell December 28, 1878, resulted in the issue to him on February 18, 1879, of the letters patent here in suit.

A comparison of the description of the patented invention (Finding IV) with the rejected applications (*supra*) shows wonderful similarity in idea and design, and would seem quite to justify claimant's contention that prior to action on his application of December 28, 1878, the examiners were wanting in understanding and appreciation of what his claimed improvement in cartridges embodied.

Claimant, as above shown, first disclosed his idea of an improvement in *center-primed* cartridges April 13, 1865.

Prior to that date and to the fall of 1866 the experience of the defendant in the manufacture of metallic cartridges was limited to making a few *rim-fire* cartridges for experimental purposes. In 1866 about fifteen experimental cartridges,

which proved failures, were made. All had hollow-flange cartridge cases. These experiments were dropped and no more of such kind were made (Finding XI).

In 1868 the defendant adopted the "cup-anvil" cartridge and continued to manufacture and use it until the month of July, 1879, when it was abandoned and the "reloading" cartridge was adopted in its stead (Findings XI, XII).

It thus appears that from 1865 to 1879 the claimant was striving to protect by letters patent an improvement in metallic cartridges which combined certainty of fire with tight jointure and freedom from galvanic action and guaranteed safety in transportation.

In 1879 the Patent Office officials for the first time awoke to the merits of claimant's invention, and February 18 rewarded his persistent and repeated applications for recognition by the issue to him of letters patent. March 22, 1879, claimant informed the Secretary of War of the issuance of such letters patent and asked that his cartridge be used and a fair royalty paid him therefor. In July, 1879, the "cup-anvil" cartridge which had served defendant since 1868 was abandoned and the present reloading cartridge adopted in its stead.

That the "reloading" cartridge infringes appellant's patent rights seems clear. The difference between them is of that slight character which a skilled mechanic, urged to evade a patented article, might readily conceive and put in form.

Gill was the master armorer at the Frankford arsenal from March, 1864, to March, 1881 (Gill's case, 160 U. S., 426).

With Hubbell's patent before him and appreciating the value of the invention covered by it, he set about to evade it, if possible, and on July 29, 1879, made application for letters patent covering an anvil having "a groove extending directly across its face and backward through the

edges," the very form of anvil used by the defendant in the reloading cartridge.

At a glance it will be seen that the combination of such an anvil with a solid-flanged cartridge case and a central chamber of fulminate in the bottom thereof when the latter is struck by the striker of a proper gun performs and was intended to perform the same functions in the same manner that the combination described in the Hubbell patent performs.

It has been repeatedly held that a charge of infringement may be made out even though the letter of the claims of the prior patent be avoided.

Union Paper Bag Mac. Co. *vs.* Murphy, 97 U. S., 120.
Elizabeth *vs.* Nicholson Pavement Co., 97 U. S., 137.
Sessions *vs.* Romadka, 145 U. S., 29.
Hoyt *vs.* Hoyne, 145 U. S., 302.

Upon the whole matter it is submitted that the judgment of this court heretofore entered in cause No. 198 of October term, 1897, should be set aside and the judgment of the Court of Claims in both of the above-entitled causes should be reversed and the causes remanded to that court with directions to enter judgment in favor of the claimant as follows, viz:

No. 13793 for $19,860.07.
No. 16261 for $157,598.98.

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